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CALIFORNIA STATE BOARD OF HEALTH

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Bulletin

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EDITOR

Safe Water on Outing Trip.

The summer tourist season is now at its height. California highways are literally crowded with automobiles loaded down with camping equipment. Municipal and private automobile camps are running to full capacity, forcing many campers to make their camps along the roadside. If a safe drinking water is not available at such places, there is great danger of contracting typhoid or other intestinal diseases through the promiscuous use of water from questionable sources. It is not possible to carry water from home if a long trip is undertaken and therefore it sometimes becomes necessary to resort to the chemical disinfection of small volumes of water while on a camping expedition. The use of iodine for this purpose was advocated by the California State Board of Health in 1917 and the United States Army School of Hygiene has this summer made similar recommendations. The original article published in the June, 1917, Bulletin of the California State Board of Health is reproduced here in part:

"The purity of a water can not be judged by its appearance. The things visible to the naked eye are usually harmless. The invisible germs of disease are by far more injurious to human beings. Chemical poisoning through water is rare and is seldom encountered except in a few sections such as Death Valley, where arsenic has been found in certain

springs. Bacterial poisoning, on the other hand, is a very real danger when waters become contaminated even in the slightest degree by human sewage.

To most people the requisite for a good drinking water is that it be cool, clear, sparkling and free from color and odor. These are all physical aspects of a water supply and do not convey a proper idea of the safety. Even the sparkle may be due to decomposition products, such as nitrates and carbonic acid. As a matter of fact, all surface waters, regardless of appearance, are subject to more or less human contamination. This may have come from the recent access of a hiker to the watershed or from the more persistent discharge of sewage into the stream from some private dwelling, resort or community on the stream or on some of its feeders. The average person does not contemplate with sufficient care the danger which may lurk in a given stream. A good deal of this carefree regard of water supplies is due to the very erroneous conception that streams purify themselves in flowing over their rocky beds. It is true that there is a "purification" when water cataracts along, but it pertains to aeration and oxidation of the dissolved organic matters and not to the bacterial ingredients. The babbling brook may be expected to taste sweeter than some other more stagnant body of water, but may, and usually does, contain even more danger-indicative bacteria than the standing water. Sewage bacteria introduced into water gradually disappear by reason of the unfavorable surroundings compared to those to which

they were accustomed in the intestines. Laboratory work has shown, however, that typhoid fever germs will survive for as long as thirty days in waters of ordinary temperatures and for much longer periods in cold waters. Such beautiful streams as the Truckee River and the upper Sacramento in the vicinity of Shasta are good examples of streams contaminated with sewage to such an extent that it can be easily distinguished by laboratory examination, and yet are looked upon by almost everyone as being very safe. Every mountain stream is subject to more or less of this same kind of contamination, as vacation typhoid statistics too well show.

BEST TO BOIL WATER.

The safest method of destroying disease germs in water is by actual boiling. Boiling the water five minutes will kill the germs of typhoid and all allied diseases. This method is not always convenient, as laws prohibiting camp fires are in force in certain forested districts. Disinfection of water by chemical means appears to be of more general acceptability. Many chemicals have been recommended with more or less success. The chief purpose of a chemical is to destroy the germs by oxidation. The principle in chemical disinfection in small volumes of water is the addition of an excess of the sterilizing chemical, and after it has been allowed to react for a definite period of time a second chemical is added to neutralize the unspent portion of the first.

Some of the more satisfactory disinfectants are chlorine, in the form of chloride of lime, and iodine. Iodine, in the form of tincture of iodine, is considered more satisfactory for small volumes of water than the use of chloride of lime. It is more convenient to carry and use and less apt to affect the taste of the water. Tincture of iodine may be purchased from any drug store, and is fairly uniform in composition. It is essential in every camping kit, as it may be put to various uses, as for sprains, scratches, cuts, snakebites, and the like. The fact that it is carried by many campers makes its use as a water disinfectant invaluable. A large number of experiments carried out in the laboratory of this bureau on waters from various sources likely to be used by campers has demonstrated the efficacy of tincture of iodine as a water disinfectant. It was found that for clear waters, even though they were grossly contaminated, three drops to each quart of water was sufficient to eliminate disease-producing bacteria.

DIRECTIONS FOR DISINFECTION.

The method recommended is as follows: To one quart of clear water add three drops (such as is obtained with the ordinary eyedropper) of tincture of iodine. To waters which are cloudy or which contain considerable sediment, six drops may be needed. Iodine should be added until a slight but distinct brown color is noticeable. Allow the iodine to react for fifteen minutes, after which add a very small pinch of sodium thiosulphate, or hypo—the chemical used for fixing in photographic work—to destroy the residual iodine. The water will regain its original appearance.

As color appearance is the essence of disinfection, a clear glass jar should be used. If the water is disinfected in a canteen or other invisible receptacle, the color may be observed in a drinking glass. The fifteen-minute interval between the addition of chemicals is very essential. Sterilization is not complete in less time. The amount of hypo used should be kept at a minimum, as overdosing will impart a slight bitter aftertaste. The chemicals as recommended in the above amounts are not injurious to health.

As a general proposition it is far safer to carry along a jug of water from home where its quality is quite well known than to rely on any chance stream. On long trips, however, this is out of the question. The present article is intended to give a practical way of treating such water as is used on the trip so that no risk whatever need be taken."



In California last year 73,205 children were born and during the same year 5,216 deaths of infants under one year of age occurred. The total number of deaths in 1922 was 51,962. The estimated population of the state for July 1, 1922, was 3,697,000.



The time is coming when every death from diphtheria will be looked upon as one of criminal negligence on the part of someone, and, therefore, a case for the coroner's jury to decide upon. The sins of omission are not less culpable than those of commission.—Chas. J. Hastings, M. D.



There isn't the slightest doubt but that money is well spent on garbage and refuse disposal and their attendant nuisances but there is a question as to whether or not money should be spent from public health appropriations for these purposes unless they present important public health problems. If, for example, a city makes an appropriation of \$2.00 per capita for public health and seventy cents of that two dollars is spent on garbage, rat, and refuse complaints, is that city really spending \$2.00 per capita on public health? We are inclined to feel that it is not.—Detroit Weekly Health Review.

Dr. Frank L. Kelly Joins Faculty of University.

Dr. Frank L. Kelly, Epidemiologist of the California State Board of Health, has been granted a leave of absence in order to assume the assistant professorship of public health administration in the University of California. In addition to his duties in the university, Dr. Kelly will also be health officer of the city of Berkeley. Dr. Kelly has been associated with the California State Board of Health since 1915. For two years, during the war, he was director of the Bureau of Communicable Diseases, and since 1920 has served as epidemiologist. His wide training and experience in communicable disease control has made him a vital factor in disease prevention in California. Some of the state's most important investigations into epidemics have been made by him and his contributions to public health in California have been noteworthy. His new duties in the teaching field will extend to others the results of his active experience. In his duties as health officer of Berkeley, that city will have the benefit of his expert services in disease control and public health administration. Berkeley, with its large university population, is an important factor in the maintenance of the state's health and the responsibilities of its health officer are great. The members of the staff of the California State Board of Health and the many health officers throughout the state extend their well wishes to Dr. Kelly in his new capacity.



TUBERCULOSIS IN CATS AND DOGS

Recently the statement was made in one of the leading journals of veterinary medicine that "tuberculous cats and dogs are far from rare in England and that they are a very great menace to the health of children." This statement does not appear to be warranted by the facts observed in the United States, however true it may be of the cats and dogs of England. There are many reasons why the fondling of pets by children that brings them in contact with the mouth and nose of the animal, should be discouraged. Dogs and cats have filthy habits of eating, and, even when they are carefully tended and watched, are very likely to have nose and mouth contaminated by unclean, loathsome material. Moreover, they are quite certainly capable of serving as carriers of infection from a child sick with a contagious disease to one who is well. Tuberculosis is not one of the diseases, however, from which dogs and cats often suffer or are liable to convey to a human being.—*Hygeia*.

Sanitation and Resorts.

Summer vacations are necessary for the preservation of health. These annual periods of relaxation have demonstrated their value in the increased fitness of men and women to perform the life tasks before them.

Sanitation is just as important for vacations as it is for other days of the year and the vacationist who seeks rest or recreation in a place where sanitary conditions are poor is often doing himself more harm than good.

It is just as important that the summer resort have proper sanitation as it is that the city have sanitation. Lack of sanitation breeds the same diseases in both places.

Health officers are working to eliminate as much as possible the dangers of disease by sanitary improvements at summer resorts and headway is being made, but there is still considerable room for improvement in many places.

Too many resort owners think they are extending privileges to vacationists when the vacationists seek accommodations and regard as unnecessary any improvements that will make the vacation a pleasure.

Nothing is more disgusting than to go to a place, for instance, where water is supposed to be available and find that at least 50 per cent of the time there is not even enough water to drink. Cleanliness under such conditions is almost next to impossible. On top of this the vacationist finds little to be pleased about when the owners of the resorts are indifferent to the remedying of such conditions.

Such conditions as this exist right here in California and should be given the personal attention of health and other state regulatory bodies.

When sanitation at summer resorts is brought up to a standard that reduces the danger of disease to a minimum, then the summer resort can be properly classed as a place where the vacationist may expect to receive health benefits.—*Fresno Republican*.



Many occupations in which the mortality from tuberculosis is high are not in themselves conducive to tuberculosis, but are occupations in which employees are underpaid or overworked, or which are sought by the physically unfit, the improvident, or persons ignorant or careless of the measures necessary to keep healthy. Outside of certain dusty occupations, the lowest tuberculosis mortality is found among the callings which are characterized by comfortable living and moderate exertions.—Surgeon F. C. Smith, U.S.P.H.S., in *Public Health Reports*.

MORBIDITY.***Diphtheria—90 cases.**

Berkeley 4, Oakland 6, Colusa 1, Crockett 2, Los Angeles County 16, Alhambra 1, Glendale 1, Long Beach 3, Los Angeles 28, San Fernando 1, Madera County 1, San Rafael 1, Riverside 1, Sacramento 2, Ontario 1, San Bernardino 1, San Francisco 10, Stockton 4, Daly City 1, Santa Clara County 1, Vallejo 1, Stanislaus County 2, Sutter County 1.

Measles—163 cases.

Alameda 4, Berkeley 5, Oakland 1, San Leandro 1, Chico 1, Oroville 1, Crockett 1, Richmond 1, Fresno County 2, Orland 1, Eureka 4, Los Angeles County 4, Alhambra 2, Los Angeles 21, Monrovia 1, Pasadena 1, Santa Monica 4, San Rafael 1, Fort Bragg 1, Monterey County 10, Salinas 1, Calistoga 2, Orange County 1, Riverside 4, San Bernardino 1, San Francisco 46, Lodi 2, San Luis Obispo County 9, Santa Clara County 2, Gilroy 2, Los Gatos 2, Palo Alto 2, Redding 1, Sonoma County 5, Stanislaus County 3, Modesto 3, Sutter County 1, Trinity County 3, Yolo County 1, Yuba County 4.

Scarlet Fever—56 cases.

Oakland 3, Fresno County 1, Los Angeles County 5, Huntington Park 3, Long Beach 2, Los Angeles 15, Monrovia 1, Pomona 1, San Gabriel 1, Whittier 1, Madera County 1, Orange County 1, Fullerton 1, Sacramento 1, San Bernardino County 1, Redlands 1, San Bernardino 5, San Francisco 4, Stockton 1,

Redwood City 1, Vallejo 1, Modesto 1, Ventura County 1, Yolo County 3.

Smallpox—34 cases.

El Dorado County 1, Los Angeles County 6, Los Angeles 20, Pomona 1, Pacific Grove 1, Chino 4, San Francisco 1.

Typhoid Fever—29 cases.

Fréno County 1, Brawley 1, Los Angeles County 7, Alhambra 2, Azusa 1, Glendale 2, Los Angeles 1, Marin County 1, Placer County 1, Redlands 1, San Diego County 1, San Francisco 1, San Joaquin County 5, Lodi 1, Stockton 1, Marysville 1, California 1.

Whooping Cough—62 cases.

Alameda 1, Oakland 4, Eureka 6, Los Angeles County 5, Long Beach 3, Los Angeles 15, Pomona 1, Santa Monica 1, Riverside 1, San Diego County 1, San Francisco 7, Lodi 1, Santa Cruz County 2, Palo Alto 3, Dunsmuir 1, Sonoma County 9, Trinity County 1.

Epidemic Meningitis—1 case.

Napa County 1.

Poliomyelitis—4 cases.

Glendale 1, Fort Bragg 1, Sacramento 1, San Francisco 1.

Epidemic Encephalitis—4 cases.

Livermore 1, San Francisco 2, Woodland 1.

*From reports received by August 7 for week ending August 4, 1923.

COMMUNICABLE DISEASE REPORT.

Disease	1923			Reports for week ending Aug. 4 received by Aug. 9	1922			Reports for week ending Aug. 5 received by Aug. 8		
	Week ending				Week ending					
	July 14	July 21	July 28		July 15	July 22	July 29			
Anthrax-----	0	0	1	0	0	0	0	0		
Cerebrospinal Meningitis	3	6	0	1	0	2	2	1		
Chickenpox-----	112	51	43	37	50	42	20	21		
Diphtheria-----	111	130	129	90	111	91	119	83		
Dysentery (Bacillary)-----	0	12	0	1	0	1	16	1		
Epidemic Encephalitis-----	2	4	3	4	1	2	2	2		
Gonorrhoea-----	149	92	83	83	87	87	72	164		
Influenza-----	10	8	14	2	12	6	4	3		
Leprosy-----	0	0	0	0	1	2	0	0		
Malaria-----	7	4	8	2	7	4	7	8		
Measles-----	424	348	605	163	15	13	6	5		
Mumps-----	10	10	10	9	29	10	6	6		
Pneumonia-----	23	25	96	25	52	29	60	25		
Poliomyelitis-----	0	5	1	4	2	1	1	1		
Rabies-----	0	0	0	0	0	0	1	0		
Scarlet Fever-----	66	94	70	56	44	35	37	28		
Smallpox-----	36	41	34	34	26	14	15	30		
Syphilis-----	113	129	103	167	109	97	116	137		
Tuberculosis-----	165	146	120	147	160	130	188	112		
Typhoid Fever-----	15	24	24	29	35	34	38	12		
Typhus Fever-----	0	1	1	0	1	0	0	0		
Whooping Cough-----	72	106	78	62	87	61	93	57		
Totals-----	1318	1236	1423	916	829	661	803	696		

CALIFORNIA STATE PRINTING OFFICE